

SECTION 301 - STORM SEWERS

1. DESCRIPTION

This item shall consist of constructing sewers for the removal of surface water from collection points; at the location and to the lines, grades, and details shown on the plans and in accordance with these specifications.

2. CLASSIFICATION OF STORM SEWER PIPE

Reinforced concrete pipe shall be as specified in Section 1902, Kansas Department of Transportation Standard Specification, 1980 Edition. Pipe reinforcement shall be as specified in Section 1902 Kansas Department of Transportation Standard Specification. Pipe shall be inspected upon delivery at the site of the work and may be rejected for porous spots, patches to repair defects, cracks, irregularity of shape or size, exposure of reinforcement, as well as for failure to meet physical requirements.

Corrugated steel pipe shall be Type A, bituminous coated as specified in Kansas Department of Transportation Standard Specifications, Sections 1905 and 1907, 1980 Edition. Shapes and dimensions shall be as indicated on the plans. Bent, twisted, or deformed sections of corrugated steel pipe shall be rejected and where the bituminous coating of the pipe has been "skinned" or otherwise removed, it shall be restored prior to the laying and backfilling of the pipe.

Corrugated aluminum alloy pipe shall be as specified in Section 1905, Kansas Department of Transportation Standard Specification, 1980 Edition. Shapes and dimensions shall be as indicated on the plans. Bent, twisted, or deformed sections of corrugated aluminum alloy pipe shall be rejected.

High Density Polyethylene (HDPE) Corrugated and Smooth lined Thermoplastic pipe shall be as specified in AASHTO M 294 and AASHTO MP7, latest editions. Shapes and dimensions shall be as indicated on the plans.

Additional storm sewer pipe information is shown in Section 51, entitled "Basis of Payment," concerning pipe material, pipe class, pipe gauge, etc.

Prior to the installation of any pipe on the project, the Contractor shall be required to furnish in writing, proper certification from the manufacturer or a recognized testing agency, that the pipe fulfills every requirement of the specifications set forth above.

Rejected sections of pipe, either concrete or corrugated metal, shall be immediately removed from the job site.

3. EXCAVATION

The trench shall be excavated beginning at the outlet end and proceeding toward the upper end; true to line and grade shown on the plans or as established by the Engineer. Trench excavation shall conform to Section 101, entitled "Trench and Backfill."

4. LAYING

All pipe shall be laid with ends abutting and true to line and grade. They shall be laid in the beds so that the lower portion of each pipe is supported for its entire length to a depth at least equal to one-fourth (1/4) the external diameter of the pipe. They shall be fitted and matched so that when laid in the trench, they will form a sewer with a smooth uniform invert.

5. JOINTS

Bell ends (when bell and spigot pipe is used) shall be carefully cleaned before pipes are lowered into the trench. Joints shall be cemented with a cement mortar composed of one (1) part Portland cement and three (3) parts of fine aggregate mixed with sufficient water to form a plastic mortar. As each section of pipe is laid, the bell or hub of the preceding pipe shall be cleaned and the bottom portion filled with mortar. After the pipe is placed the remaining portion of the joint shall be filled. The inside of the joint shall then be finished smooth and wiped clean. The mortar on the outside shall, after its initial set be protected from the sun with earth or other covering. No cement mortar joints may be made when the outside temperature is 32 degrees, Fahrenheit, or lower, unless the joints are protected.

Sections of corrugated metal pipe shall be placed with the ends abutting and jointed with the manufacturer's coupling bands.

6. BACKFILLING

Trench backfilling shall conform to Section 101, entitled "Trench and Backfill."

7. PIPE END SECTION

End sections for reinforced concrete pipe shall be as specified in Section 1902, Kansas Department of Transportation Standard Specifications, 1980 Edition. End sections for corrugated steel and for corrugated aluminum alloy pipe shall be as specified in Section 1905, Kansas Department of Transportation Standard Specifications, 1980 Edition.

8. CONNECTION TO EXISTING MANHOLE

Storm sewer pipe shall be connected to existing manholes at locations shown on the plans or as directed by the Engineer. The opening in the manhole shall be large enough to insert the sewer pipe and then it shall be sealed up with mortar.